

INITIAL STUDY

EA-09-10, SD-09-02: Clayton-O'Brien

JANUARY 2010



SECTION 1. PROJECT INFORMATION

1.1. Project Title: SD-09-02; EA-09-10: Clayton-O'Brien

1.2. Lead Agency Contact

Steve Golden
Planning Division, Community Development Department
City of Morgan Hill
17575 Peak Ave
Morgan Hill, CA 95037

408-778-6480
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1.3. Project Location

The proposed project is located on Clayton Avenue, north of Peebles Ave in the City of Morgan Hill.

1.4. Owner/Applicant

Dennis and Gloria O'Brien Foundation
950 Tower Lane, Suite 1250
Foster City, CA 94404

1.5. General Plan Designation: Single Family Low

1.6. Zoning: R1-20,000

SECTION 2. PROJECT DESCRIPTION

The applicant proposes to subdivide the property into seven parcels for the development of seven single family units (some include secondary units). Public street improvements currently exist along Clayton Avenue and Peebles Avenue, however, additional improvements adjacent to existing or replacing existing improvements might be required as part of this development. Other on-site improvements are proposed that are typical of single family development (grading, utilities, accessory structures, etc).

The applicant has filed a subdivision application. However, this initial study assumes the further development of the land and potential impacts into single family development. Further discretionary approvals such as Design Review will be required as a result of the proposed development. This initial study addresses all potential impacts known at this time for future development of the subject location into seven parcels for single family residential development.

2.1. Site Description and Setting

The proposed site consists of approximately 3.59 acres and is presently vacant. The ground cover is primarily mixed grasses and weeds and is mowed regularly for vegetation management. No trees are present on the site.

Figure 1 shows the subject parcel and surrounding area.¹

2.2. Surrounding Land Uses

The immediate land uses are as follows:

North – Mobile Home Park, Rural Residential/Agriculture (greenhouses)

West – Single Family Units

East - Rural Residential/Agriculture (greenhouses)

South - Single Family Units, Rural Residential/Agriculture (greenhouses)

¹ Aerial Photo obtained April 2006.

SECTION 3. EVALUATION OF ENVIRONMENTAL IMPACTS

This section describes the existing environmental conditions on and near the project site, as well as environmental impacts associated with the proposed project. The environmental checklist, as recommended in the California Environmental Quality Act (CEQA) Guidelines, was used to identify environmental impacts that could occur if the proposed project is implemented.

Mitigation measures are identified for all significant project impacts. "Mitigation Measures" are measures that will minimize, avoid, or eliminate a significant impact (CEQA Guideline 15370). Measures that are required by law or are City standard requirements are categorized as "Standard Measures."

Environmental Factors Potentially Affected:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is "Less Than Significant with Mitigation Incorporation" as indicated by the checklist on the following pages.

	Aesthetics		Agriculture Resources		Air Quality
	Biological Resources		Cultural Resources		Geology / Soils
	Hazards & Hazardous Materials		Hydrology / Water Quality		Land Use / Planning
	Mineral Resources		Noise		Population / Housing
	Public Services		Recreation		Transportation / Traffic
	Utilities / Service Systems		Mandatory Findings of Significance		

3.1. Aesthetics

Would the project have:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

visual character or quality of the site and its surroundings?

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

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3.1.1. Discussion

The project proposes to subdivide the vacant land into seven lots for future development of single family homes. The proposed project is located within the City, but near the perimeter of the city boundary and urban/suburban type of development. Outside of the city boundary consists of development that is lower density and more rural in character.

The streets that this development is adjacent to (Clayton Ave and Peebles Ave) have already been improved to public standards and contain standard street lights. Future development of the single family homes would likely introduce additional light and glare that is typical of this type of development (vehicle lights, porch and yard lights, etc.), but are unlikely to be significant sources of light.

3.1.1. Conclusion

The proposed project would not result in a significant impact to aesthetics. (Less than Significant Impact)

3.2. Agriculture Resources

Would the project:

Potentially
Significant
Impact

Less Than
Significant with
Mitigation
Incorporation

Less Than
Significant
Impact

No
Impact

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

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b) Conflict with existing zoning for agricultural use, or a Williamson Act

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contract?

c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?

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3.2.1. Discussion

Agricultural use of the property occurred in the past, however, the property is currently vacant. According to the Important Farmland mapping of the Department of Conservation (Farmland Mapping and Monitoring Program 2008), this area has been mapped as Grazing Land and is not considered Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

This area has been zoned for residential and the intended use (single family units) is consistent with the zoning district and surrounding land uses.

3.2.2. Conclusion

The proposed project would not result in a significant impact to agricultural resources. (No Impact)

3.3. Air Quality

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

exceed quantitative thresholds for ozone precursors)?

d) Expose sensitive receptors to substantial pollutant concentrations?

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e) Create objectionable odors affecting a substantial number of people?

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3.3.1. Discussion

Air quality is regulated through standards set by the Federal Clean Air Act. Pursuant to this Act, the United States Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for outdoor air pollutants which are considered safe for public health. The criteria pollutants include:

- Carbon Monoxide
- Ozone
- Nitrogen dioxide
- Sulfur Dioxide
- Particulate Matter (PM10)
- Lead

In California, air quality is overseen by the California Air Resources Board (CARB). In addition to NAAQS, California has established the California Ambient Air Quality Standards. These standards are generally more stringent than the NAAQS and also include hydrogen sulfide, vinyl chloride, and visibility reducing particles. After State standards are established, State law requires the ARB to designate areas as attainment, nonattainment, nonattainment-transitional, or unclassified for each State standard. The size of the area is determined by the pollutant, the location of contributing emission sources, meteorology, topographic features, and political boundaries. Air basins are the area designated for ozone, nitrogen dioxide, PM10, sulfates, and visibility reducing particles. Counties (or the portion of a county located within an air basin) are the areas designated for carbon monoxide, sulfur dioxide, lead, and hydrogen sulfide.

Area Designations

Unclassified: a pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.

Attainment: a pollutant is designated attainment if the state standard for that pollutant was not violated at any site in the area during a three-year period.

Nonattainment: a pollutant is designated nonattainment if there was at least one violation of a State standard for that pollutant in the area.

Nonattainment/Transitional: is a subcategory of the nonattainment designation. An area is designated nonattainment / transitional to signify that the area is close to attaining the standard for that pollutant.

The project site is within the San Francisco Bay Area Air Basin (SFBAAB), which is overseen by the Bay Area Air Quality Management District (BAAQMD). BAAQMD is the regional agency primarily responsible for assuring that the NAAQS and CAAQS are attained and maintained within the air basin.

Three pollutants (ozone, PM10, and PM2.5) are known to exceed the state or federal standards in the SFBAAB and is considered non-attainment zones for these pollutants. The U.S. Environmental Protection Agency (EPA) has also recently designated the SFBAAB as nonattainment for the new 24-hour fine particulate (PM2.5). However, the designation will not be effective until after publication of the regulation in the Federal Register.

Mobile sources, including on-road motor vehicles such as automobiles, trucks and buses are the largest contributor or ozone precursors in the Bay Area.

3.3.2. Short Term Air Quality Impacts

Construction of the proposed project could result in short-term air quality impacts. Construction-related air quality impacts are typically the result of dust creating activities, exhaust emissions of construction equipment, and the standard use of construction materials such as solvents, paints and other construction materials that tend to volatilize into the atmosphere. Construction equipment emits carbon monoxide and ozone precursors. However, these emissions are included in the emission inventory that is the basis for regional air quality plans, and are not expected to impede attainment or maintenance of ozone and carbon monoxide standards in the Bay Area (BAAQMD CEQA Guidelines 1999). Due to the negligible amount and short duration, the exhaust emissions of construction equipment and use of volatile construction materials would not result in a significant air quality impact.

Construction activities such as excavation and grading operations and construction vehicles driving over and wind blowing over exposed earth, generate fugitive particulate matter that can affect local and regional air quality. The effects of these dust generating activities will be increased dustfall and locally elevated levels of particulate matter downwind of the construction activity. Construction dust has the potential for creating a nuisance at nearby properties. If uncontrolled, dust generated by construction activities could be a significant impact.

The following standard dust control measures will reduce potential construction related air quality impacts for particulate matter to less than significant levels:

Standard Measure

In accordance with the City of Morgan Hill Standards, prior to recordation of the final map, the applicant shall submit to the Public Works Director for approval, a management plan detailing

strategies for dust control during construction of the project. The intent of this condition is to minimize construction related disturbance of residents of the nearby or adjacent properties.

3.3.3. Conclusion

Due to standard measures that will be incorporated into the project, the proposed project would not result in a significant impact to air quality. (Less Than Significant Impact)

3.4. Biological Resources

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.4.1. Discussion

The project proposes to subdivide the vacant land into seven lots for future development of single family homes. Based on current and historical aerial photos the land has been vacant or used for agricultural purposes in recent times. Based on the current conditions of this land and the surrounding property, it is unlikely to be supportive of sensitive natural communities and species. In addition, there are no wetlands or riparian areas that would be directly affected by the proposed development.

3.4.2. Conclusion

The proposed project would not result in a significant impact to biological resources. (No Impact)

3.5. Cultural Resources

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

those interred outside of formal cemeteries?

3.5.1. Discussion

The project proposes to subdivide the vacant land into seven lots for future development of single family homes. Based on current and historical aerial photos the land has been vacant or used for agricultural purposes in recent times.

3.5.2. Undocumented Historic/Archaeological Resources

According to the Morgan Hill Archaeological Sensitivity Map (2000) the entire project site is located in an area of high prehistoric or historic archaeological sensitivity, however, there are no known prehistoric or historic archaeological sites in the immediate vicinity.

Standard Measure

The Historical Resources Ordinance (Chapter 18.75) of the Morgan Hill Municipal Code contains the following standard measure for activities that occur within archaeologically sensitive areas. This standard shall be applied in areas of mapped archaeological sensitivity while ground disturbing activities (excavation and grading activities) are taking place.

1. An archaeologist shall be present on-site to monitor all ground-disturbing activities. Where historical or archaeological artifacts are found, work in areas where remains or artifacts are found will be restricted or stopped until proper protocols are met, as described below:
 - a. Work at the location of the find will halt immediately within thirty feet of the find. If an archaeologist is not present at the time of the discovery, the applicant shall contact an archaeologist for evaluation of the find to determine whether it qualifies as a unique archaeological resource as defined by this chapter;
 - b. If the find is determined not to be a Unique Archaeological Resource, construction can continue. The archaeologist will prepare a brief informal memo/letter that describes and assesses the significance of the resource, including a discussion of the methods used to determine significance for the find;
 - c. If the find appears significant and to qualify as a unique archaeological resource, the archaeologist will determine if the resource can be avoided and will detail avoidance procedures in a formal memo/letter; and
 - d. If the resource cannot be avoided, the archaeologist shall develop within forty-eight hours an action plan to avoid or minimize impacts. The field crew shall not proceed until the action plan is approved by the community development director. The action plan shall be in conformance with California Public Resources Code 21083.2.

3.5.3. Undocumented Human Remains

This project may adversely impact undocumented human remains or unintentionally discover significant historic or archaeological materials. Section 18.75.110 of the Historical Resources Ordinance of the Morgan Hill Municipal Code contains the following standard measure to reduce potentially significant impacts on undocumented human remains or archaeological resources to less than significant level.

Standard Measure

1. The following policies and procedures for treatment and disposition of inadvertently discovered human remains or archaeological materials shall apply. If human remains are discovered, it is probable they are the remains of Native Americans.
 - e. If human remains are encountered they shall be treated with dignity and respect as due to them. Discovery of Native American remains is a very sensitive issue and serious concern. Information about such a discovery shall be held in confidence by all project personnel on a need to know basis. The rights of Native Americans to practice ceremonial observances on sites, in labs and around artifacts shall be upheld.
 - f. Remains should not be held by human hands. Surgical gloves should be worn if remains need to be handled.
 - g. Surgical mask should also be worn to prevent exposure to pathogens that may be associated with the remains.
2. In the event that known or suspected Native American remains are encountered or significant historic or archaeological materials are discovered, ground-disturbing activities shall be immediately stopped. Examples of significant historic or archaeological materials include, but are not limited to, concentrations of historic artifacts (e.g., bottles, ceramics) or prehistoric artifacts (chipped chert or obsidian, arrow points, groundstone mortars and pestles), culturally altered ash-stained midden soils associated with pre-contact Native American habitation sites, concentrations of fire-altered rock and/or burned or charred organic materials and historic structure remains such as stone-lined building foundations, wells or privy pits. Ground-disturbing project activities may continue in other areas that are outside the exclusion zone as defined below,
 2. An "exclusion zone" where unauthorized equipment and personnel are not permitted shall be established (e.g., taped off) around the discovery area plus a reasonable buffer zone by the contractor foreman or authorized representative, or party who made the discovery and initiated these protocols, or if on-site at the time of discovery, by the monitoring archaeologist (typically twenty-five to fifty feet for single burial or archaeological find),
 3. The exclusion zone shall be secured (e.g., twenty-four hour surveillance) as directed by the city or county if considered prudent to avoid further disturbances,

4. The contractor foreman or authorized representative, or party who made the discovery and initiated these protocols shall be responsible for immediately contacting by telephone the parties listed below to report the find and initiate the consultation process for treatment and disposition:
 - i. The city of Morgan Hill Community Development Director,
 - ii. The contractor's point(s) of contact,
 - iii. The coroner of the county of Santa Clara (if human remains found),
 - iv. The Native American Heritage Commission (NAHC) in Sacramento, and
 - v. The Amah Mutsun Tribal Band,
5. The coroner has two working days to examine the remains after being notified of the discovery. If the remains are Native American, the Coroner has twenty-four hours to notify the NAHC,
6. The NAHC is responsible for identifying and immediately notifying the Most Likely Descendant (MLD) from the Amah Mutsun Tribal Band. (Note: NAHC policy holds that the Native American Monitor will not be designated the MLD.),
7. Within twenty-hour hours of their notification by the NAHC, the MLD will be granted permission to inspect the discovery site if they so choose,
8. Within twenty-four hours of their notification by the NAHC, the MLD may recommend to the City's community development director the recommended means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The recommendation may include the scientific removal and non-destructive or destructive analysis of human remains and items associated with Native American burials. Only those osteological analyses or DNA analyses recommended by the Amah Mutsun Tribal Band may be considered and carried out, and
9. If the MLD recommendation is rejected by the City of Morgan Hill the parties will attempt to mediate the disagreement with the NAHC. If mediation fails then the remains and all associated grave offerings shall be reburied with appropriate dignity on the property in a location not subject to further subsurface disturbance.

3.5.6. Conclusion

Due to standard measures that will be incorporated into the project, the proposed project would not result in a significant impact to cultural resources. (Less Than Significant Impact)

3.6. Geology And Soils

Would the project:

- a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

Potentially	Less Than	Less Than	No
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	Significant Impact	Significant with Mitigation Incorporation	Significant Impact	Impact
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.6.1. Discussion

Morgan Hill is located in a seismically active part of northern California. Many faults exist in the southern San Francisco Bay Area, and some of them are capable of producing ground motions that can affect the project site. Due to the project site's proximity to a number of major earthquake faults, notably the San Andreas (located about 10 miles to the southwest) and

Calaveras (located about 3.5 miles to the northeast). These larger fault systems have generated moderate to severe ground earthquakes during recorded history of the area. The Coyote Creek and Silver Creek faults located about 1 and 2 miles northeast of the site, respectively, may also be capable of generating strong to severe ground shaking. Therefore, it is reasonable to assume that the project site would periodically be subject to ground shaking due to proximity to these various faults.

The project site is located in the Morgan Hill quadrangle (USGS) and has been identified as an area with liquefaction hazards.² (see Figure 2)

The Geologic Map (City of Morgan Hill 1991) identifies area as “Relatively Stable Ground” with the following designation (see Figure 3):

- Sun – Unconsolidated colluviums, valley floor alluvium, or terrace deposits on flat or nearly flat ground. May be subject to vertical displacements under seismic or aseismic conditions.

Expansive soils shrink as the water content decreases such as (during the dry season) and swell as the water content increases (e.g. during the rainy season or by irrigation). The volume change that occurs during this shrinking and swelling process can cause cracking and damage to vehicle pavements, sidewalks, driveways, and shallow foundations.

In 1998, a Geotechnical Investigation (Redwood Geotechnical Engineering, Inc) was completed for a then proposed 18-lot subdivision. The information contained in that report is still relevant for reporting surface and subsurface conditions, however, may need to be supplemented with a more current report for the Building Division review for the issuance of a building permit. A new report, if necessary will be submitted during the review of building permits and/or site improvement approval.

The 1998 investigation found that there was firm native soil and essentially level topography that appeared to be compatible with conservatively designed conventional spread footing foundations. Near surface soil was found to have low expansion potential. At depth, dense granular sands and gravels were found. There was no static groundwater encountered in any of the four test pits that were dug (ranging from 4’ to 7’ in depth).

Based on the report, it was concluded that there were no unusual soil conditions found that would preclude well-built residences at the site using conventional construction methods and materials (the recommendations provided in that report may need further review and approval through the building permit application process and/or improvement plan construction approval process.

3.6.2. Soil Erosion and Loss of Topsoil

2 Seismic Hazard Zone Report of the Morgan Hill 7.5-minute Quadrangle, Santa Clara County California: California Geological Survey, Seismic Hazard Zone Report 096.

The development of the site would cause ground disturbance of mostly top soil related to construction activity. The ground disturbance would be limited to the areas proposed for grading including the residential building pads and areas engineered for proper drainage. Offsite improvements may also contribute to soil erosion and loss of topsoil, but will be minimized since most public street improvements are already constructed.

There will likely also be some areas for staging of materials and equipment storage while construction is on-going that if not managed and maintained properly can have cause erosion and loss of topsoil.

Standard Measure 1

Prior to the approval of improvement plans and building permits, the applicant will submit a sediment and erosion control plan to the City of Morgan Hill, Public Works Department. The plan shall be acceptable and conform to City standards to prevent significant sediment and soil erosion during construction and include the standards and guidelines found in the California Stormwater Quality Association, Stormwater Best Management Practice Handbook.

Standard Measure 2

Self SWPPP inspections and non-compliance: Project shall have the site inspected by a qualified third party SWPPP Inspector 24 hours prior to a rain event, weekly during the rainy season, and bi-weekly during the non-rainy season. The SWPPP Inspector shall certify in writing to the Building and Public Works Department if the site is in compliance/non-compliance with the SWPPP Manual and Water Pollution Control Drawings. Prior to rain events, BMPs not in compliance will need to be corrected immediately. Illicit discharges per the NPDES permit non-compliance of tracking control and inlet protection within the public right of way shall be address immediately. Other non-compliance issues need to be addressed within a 24 hour period.

Standard Measure 3

As required by the State Water Resources Control Board (SWRCB) Order No. 99-08-DWQ, construction activity resulting in a land disturbance of one (1) acre or more of soil, or whose projects are part of a larger common plan of development that in total disturbs more than one (1) acre, are required to obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002 for Discharges of Storm Water Associated with Construction Activity (General Permit). To be permitted with the SWRCB under the General Permit, owners must file a complete Notice of Intent (NOI) package and develop a Storm Water Pollution Prevention Plan (SWPPP) Manual in accordance with Section A, B, and C of the General Permit prior to the commencement of soil disturbing activities. A NOI Receipt Letter assigning a Waste Discharger Identification (WDID) number to the construction site will be issued after the SWRCB receives a complete NOI package (original signed NOI application, vicinity map, and permit fee); copies of the NOI Receipt Letter and SWPPP shall be forwarded to the Building and Public Works Department review. SWPPP shall be made a part of the improvement plans. (SWRCB NPDES General Permit CA000002)

3.6.4. Conclusion

Due to standard measures that will be incorporated into the project, the proposed project would not result in a significant impact to geology and soils. (Less Than Significant Impact)

3.7. Hazards And Hazardous Materials

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.7.1. Discussion

The project proposes to subdivide the vacant land into seven lots for future development of single family homes. Based on current and historical aerial photos the land has been vacant or used for agricultural purposes in recent times. The proposed use (single family development) is not expected to create hazardous materials nor expose residents to significant risks.

3.7.2. Conclusion

The proposed project would not result in a significant impact to hazards and hazardous materials. (No Impact)

3.8. Hydrology And Water Quality

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

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d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

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e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

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f) Otherwise substantially degrade water quality?

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g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

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h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

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i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

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j) Inundation by seiche, tsunami, or mudflow?

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3.8.1. Hydrology and Storm Water Management

The applicant proposes to subdivide an approximately 3.5 acre vacant site into seven lots for residential development. The proposed project is along Clayton Ave (north of Pebbles Ave), which is currently an improved public street with curb and gutters. According to the Public Works Department maps and discussions with Public Works staff, stormwater from the proposed project has already been considered in the general design of the stormwater system in that vicinity. Stormwater will sheetflow into the curb and gutter systems along Clayton Ave and flow in a southward direction towards Pebbles Ave. Stormwater collects into a 60" stormwater main along Pebbles Ave, flows west towards a ditch along Monterey Rd and eventually into the Fisher Creek. Based on Public Works preliminary review, the current system has adequate capacity.

Standard Measure

Prior to approval of a final map, a complete storm drainage study of the proposed development must be submitted showing amount of run-off, and existing and proposed drainage structure capacities. This study shall be subject to review and approval by the Director of Public Works. All needed improvements will be made by the applicant. No overloading of the existing system will be permitted.

3.8.2. Flooding Potential

Dams located near Morgan Hill include Anderson Dam and Chesbro Dam. According to the Association of Bay Area Governments (ABAG), almost all of the valley floor terrain in Morgan Hill is within the area that would be inundated if these dams were to fail with reservoirs at full capacity.³

The "worst case" flood of the entire valley is very unlikely, given that it would require both failure and full capacity conditions to occur at the same time. The project site is located in the dam failure inundation area of Anderson Dam.⁴

According to the Flood Insurance Rate Maps (FIRM) prepared by the U.S. Federal Emergency Management Agency (FEMA) the majority of the project is located in Zone D, however this area appears to be incorrectly mapped by FEMA and should be Zone X (areas of 0.2% annual chance flood)⁵ (Figure 4). This is not considered a 100-yr flood zone.

Standard Measure

Prior to approval of the final map, the applicant will verify that the collection system is designed to be capable of handling a 10 year storm without local flooding. On-site detention facilities shall be designed to a 25-year storm capacity. Streets shall be designed to carry a

3 ABAG compiled the dam failure inundation hazard maps submitted to the State Office of Emergency Services by dam owners throughout the Bay Area.

4 Association of Bay Area Governments, *Dam Failure Inundation Hazard Map for Morgan Hill*, 1995. <http://www.abag.ca.gov/cgi-bin/pickdamx.pl>

5 Flood Insurance Rate Map, City of Morgan Hill, Santa Clara County, California. Federal Emergency Management Agency, May 18, 2009. Flood Insurance Rate Maps (FIRM) Panel: 06085C0443H.

100-year storm.

3.8.3. Potential Water Quality Impacts

The proposed improvements include the addition of impervious surface (driveways, building footprint, and other associated accessory structures) which could increase the amount of storm water runoff generated by the site and pollutants carried by storm water runoff (e.g. oil, brake dust, and other pollutants produced by vehicles; household and landscaping products (fertilizer, pesticides, etc)), thereby adversely affecting water quality downstream of the project site.

Construction activities associated with the proposed project would require grading, which could expose onsite soils to the erosive forces of wind and rain. Erosion of onsite soils could also adversely affect water quality.

The State Water Resources Control Board (SWRCB) is responsible for implementation of the National Pollution Discharge Elimination System (NPDES) Program. The Central Coast Regional Water Quality Control Board (RWQCB) issues and enforces NPDES permits for discharges to water-bodies in the portion of Santa Clara County that drains to the Monterey Bay. Projects disturbing one acre or more of land during construction are required to file a Notice of Intent (NOI) to be covered under the State NPDES General Construction Permit for discharges of stormwater associated with construction activities.

The State NPDES General Construction Permit requires development and implementation of Storm Water Pollution Prevention Plan (SWPPP) and uses stormwater Best Management Practices (BMPs) to control runoff, erosion, and sedimentation from the site both during and after construction. The SWPPP has two major objectives: 1) to help identify the sources of sediments and other pollutants that affect the quality of stormwater discharges; and 2) to describe and ensure the implementation of practices to reduce sediment and other pollutants in stormwater discharges.

The standard measures adopted below will minimize water quality impacts due to the construction of the seven lot development.

Standard Measure 1

Self SWPPP inspections and non-compliance: Project shall have the site inspected by a qualified third party SWPPP Inspector 24 hours prior to a rain event, weekly during the rainy season, and bi-weekly during the non-rainy season. The SWPPP Inspector shall certify in writing to the Building and Public Works Department if the site is in compliance/non-compliance with the SWPPP Manual and Water Pollution Control Drawings. Prior to rain events, BMPs not in compliance will need to be corrected immediately. Illicit discharges per the NPDES permit non-compliance of tracking control and inlet protection within the public right of way shall be address immediately. Other non-compliance issues need to be addressed within a 24 hour period.

Standard Measure 2

As required by the State Water Resources Control Board (SWRCB) Order No. 99-08-DWQ, construction activity resulting in a land disturbance of one (1) acre or more of soil, or whose projects are part of a larger common plan of development that in total disturbs more than one (1) acre, are required to obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002 for Discharges of Storm Water Associated with Construction Activity (General Permit). To be permitted with the SWRCB under the General Permit, owners must file a complete Notice of Intent (NOI) package and develop a Storm Water Pollution Prevention Plan (SWPPP) Manual in accordance with Section A, B, and C of the General Permit prior to the commencement of soil disturbing activities. A NOI Receipt Letter assigning a Waste Discharger Identification (WDID) number to the construction site will be issued after the SWRCB receives a complete NOI package (original signed NOI application, vicinity map, and permit fee); copies of the NOI Receipt Letter and SWPPP shall be forwarded to the Building and Public Works Department review. SWPPP shall be made a part of the improvement plans.

Standard Measure 3

Prior to approval of the improvement plans and final map, the applicant will submit a sediment and erosion control plan to the City of Morgan Hill, Public Works Department. The plan shall be acceptable and conform to City standards to prevent significant sediment and soil erosion during construction and include the standards and guidelines found in the California Stormwater Quality Association, Stormwater Best Management Practice Handbook.

3.8.2. Conclusion

Due to standard measures that will be incorporated into the project, the proposed project would not result in a significant impact to hydrology and water quality. (Less Than Significant Impact)

3.9. Land Use And Planning

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

an environmental effect?

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

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3.9.1. Discussion

The project proposes to subdivide the vacant land into seven lots for future development of single family homes. The land is zoned for residential use and does not conflict with any applicable land use plan.

3.9.2. Conclusion

The proposed project would not result in a significant impact to land use and planning. (No Impact)

3.10. Mineral Resources

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.10.1. Discussion

The project proposes to subdivide the vacant land into seven lots for future development of single family homes. There are no known mineral resources located at this site that are considered locally-important.

3.10.2. Conclusion

The proposed project would not result in a significant impact to mineral resources. (No Impact)

3.11. Noise

Would the project result in:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.11.1. Discussion

Noise is defined as unwanted sound. Noise can be disturbing or annoying because of its pitch

or loudness. Pitch refers to relative frequency of vibrations, higher pitch signals sound louder to people. A decibel (dB) is measured based on the relative amplitude of a sound. Ten on the decibel scale marks the lowest sound level that a healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis such that each 10 decibel increase is perceived as a doubling of loudness.

For the purposes of characterizing noise assessment for CEQA, the A-weighted sound level, or dBA, gives greater weight to sounds to which the human ear is most sensitive. Sensitivity to noise increases during the evening and at night because excessive noise interferes with the ability to sleep. Twenty-four hour descriptors have been developed that emphasize quiet-time noise events. The Day/Night Average Sound Level, Ldn, is a measure of the cumulative noise exposure in a community. It includes a 10 dB addition to noise levels from 10:00 PM to 7:00 AM to account for human sensitivity to night noise.

3.11.2. Applicable Noise Standards

The Public Health and Safety Element of the Morgan Hill General Plan establishes noise and land use compatibility standards to guide development and safeguard public health by minimizing noise impacts. Goals and policies established in the Noise section of the Public Health and Safety Element of the General Plan that are applicable to the proposed project include:

Noise Policy 7a – New development projects shall be designed and constructed to meet acceptable exterior noise level standards, as follows:

- The maximum exterior noise level of 60 dBA Ldn shall be applied in residential areas where outdoor use is a major consideration (e.g., backyards in single family housing developments and recreation areas in multi-family housing projects). Where the City determines that providing an Ldn of 60 dBA or lower cannot be achieved after the application of reasonable and feasible mitigation, an Ldn of 65 dBA may be permitted.
- Indoor noise levels should not exceed an Ldn of 45 dBA in new residential housing units.
- Noise levels in new residential development exposed to an exterior Ldn 60 dBA or greater should be limited to a maximum instantaneous noise level (e.g., trucks on busy streets, train warning whistles) in bedrooms of 50 dBA. Maximum instantaneous noise levels in all other habitable rooms should not exceed 55 dBA. The maximum outdoor noise level for new residences near the railroad shall be 70 dBA Ldn, recognizing that train noise is characterized by relatively few loud events.

According to the Future Noise Contours Map in the General Plan, the closest noise contour to the subject property is designated 65dBA Ldn (however, the subject property is significantly within this contour, therefore, the noise level is likely much less than 65dBA Ldn) (see Figure 5. The majority of significant noise generated in this area is due to traffic on Monterey Rd (approximately 1,400ft away) and the railroad tracks (approximately 1,500ft away). A significant portion of the noise generated by these sources is likely attenuated by the existing residential and commercial development directly to the west of the subject property. Because

of these circumstances, it is reasonable to assume that exterior noise levels will not exceed the noise policy of 60dBA Ldn.⁶

Standard Measure

The applicant shall have an acoustical analysis prepared by a licensed professional, specifying the manner in which interior noise levels will be reduced to the required forty-five (45) dba. The details of noise attenuation recommended in the report will be subject to review and approval of the Chief Building Official prior to issuance of the building permit. (CBC Appendix chapter 1208)

3.11.3. Construction Noise Assessment and Potential Impacts

The construction of the project would generate noise, and would temporarily increase noise levels at adjacent residential receptors. Construction equipment would likely include backhoes, excavators, dump trucks, front-end loaders, compacting equipment, concrete trucks, hand tools (saws, drills, hammers, etc), and various passenger vehicles. Noise impacts resulting from residential construction depends on the noise generated by various pieces of construction equipment, the timing and duration of noise generating activities, and the distance between construction noise sources and noise sensitive receptors. Construction activities generate considerable amounts of noise, especially when heavy equipment or power tools are used.

Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (e.g., early morning, evening, and nighttime hours), the construction occurs immediately adjacent to noise sensitive land uses (e.g., residential uses), or when construction durations last over extended periods of time. Construction of the residential units would result in temporary noise level increases at sensitive receivers in the vicinity of project. Noise level increases that occur for more than one year can be considered prolonged interference, however, the project is assumed to be completed in less than one year. Noise impacts are also more interfering when the noise producing activities occur during noise-sensitive times of the day (e.g. early morning, evening, and nighttime hours).

Under the Morgan Hill Municipal Code, the allowed hours of construction are controlled to avoid substantial impacts to sensitive receptors.

Standard Measure to Reduce Construction Noise Impacts

Construction activities shall be limited to the hours between 7:00 AM and 8:00 PM, Monday through Friday, and between the hours of 9:00 AM and 6:00 PM on Saturdays. No construction activities should occur on Sundays or federal holidays. (Morgan Hill Municipal Code Chapter 8.28.040)

3.11.4. Conclusion

⁶ The proposed project is within the vicinity of the railroad tracks, therefore, a maximum outdoor noise level of 70 dBA Ldn can also be considered.

Due to standard measures that will be incorporated into the project, the proposed project would not result in a significant impact from noise or groundbourne vibration. (Less Than Significant Impact)

3.12. Population And Housing

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.12.1. Discussion

Residential growth in Morgan Hill is controlled by the Residential Development Control System (RDCS). By approving Measure C in 2004, Morgan Hill voters extended the City's RDCS to 2020. The General Plan assumes the residential growth allowed by the RDCS and the current allowed rate of approximately 220 new units per year will continue until 2020, with the end result being a city population of 48,000.

The proposed project consists of subdividing the property into seven parcels for the development of seven single family units. This proposed development was awarded seven building allotments under the RDCS. Therefore, the population growth resulting from these units are consistent with the assumptions in the City of Morgan Hill General Plan and is not considered to be a significant impact.

3.12.2. Conclusion

The proposed project would not result in a significant impact to population and housing. (Less Than Significant Impact)

3.13. Public Services

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.13.1. Discussion

The project proposes to subdivide the vacant land into seven lots for future development of single family homes. Based on the size of the project, proximity to existing development, and existing improvements, the project is not expected to have significant impacts to public services.

3.13.2. Conclusion

The proposed project would not result in a significant impact to public services. (No Impact)

3.14. Recreation

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

substantial physical deterioration of the facility would occur or be accelerated?

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

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3.14.1. Discussion

The project proposes to subdivide the vacant land into seven lots for future development of single family homes. The project does not include recreational facilities, however, the project will be providing Class I bike lanes, however, will be built within the existing public right-of-way. Based on the size of the project, it is not expected to adversely increase the use of existing parks.

3.14.2. Conclusion

The proposed project would not result in a significant impact to recreation. (No Impact)

3.15. Transportation/Traffic

Would the project:

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

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Mitigation
Incorporation

Less Than
Significant
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No
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b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

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c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

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d) Substantially increase hazards due to a

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design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.15.1. Discussion

The project proposes to subdivide the vacant land into seven lots for future development of single family homes. The location of the project is along improved streets and based on the size of the project, not expected to have adverse affects on traffic/transportation.

3.15.2. Conclusion

The proposed project would not result in a significant impact to transportation and traffic. (No Impact)

3.16. Utilities And Service Systems

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

construction of which could cause significant environmental effects?

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

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e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

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f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

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g) Comply with federal, state, and local statutes and regulations related to solid waste?

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3.16.1. Discussion

The City of Morgan Hill's storm drainage system consists of a combination of curb and gutter facilities, curb inlets, underground pipelines, and bubblers that drain to the nearest creek or to manmade natural detention basins. The City's Storm Drainage System Master Plan (2002) evaluated the existing system and determined that the current and proposed design capacities accommodates 100-year design storms for the build-out land use conditions, as established in the City's General Plan. The Storm Drainage Master Plan proposes enhancements to the existing storm drainage in anticipation of future growth and is implemented through the City's Capital Improvement Program.

According to the Public Works Department maps and discussions with Public Works staff, stormwater from the proposed project has already been considered in the general design of the stormwater system in that vicinity. Stormwater will sheetflow into the curb and gutter systems along Clayton Ave (currently exists as an improved public street with curb and gutter) and flow in a southward direction towards Peebles Ave. Stormwater collects into a 60" stormwater main along Peebles Ave, flows west towards a ditch along Monterey Rd and eventually into the Fisher Creek. Based on Public Works preliminary review, the current system has adequate capacity.

Standard Measure

Prior to approval of a final map, a complete storm drainage study of the proposed development must be submitted showing amount of run-off, and existing and proposed drainage structure capacities. This study shall be subject to review and approval by the Director of Public Works.

All needed improvements will be made by the applicant. No overloading of the existing system will be permitted.

3.15.3. Conclusion

Due to standard measures that will be incorporated into the project, the proposed project would not result in a significant impact to utilities and service systems. (Less Than Significant Impact)

3.16. Mandatory Findings Of Significance

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.17. Discussion

The proposed project would not result in significant environmental impacts with the implementation of the City's standard measures included in the project as described in the

individual categories of *Section 3, Evaluation of Environmental Impacts* of this Initial Study. By incorporating standard measures, the proposed seven lot residential subdivision would not result in significant environmental impacts.

SECTION 4. REFERENCES CONSULTED IN THIS REPORT

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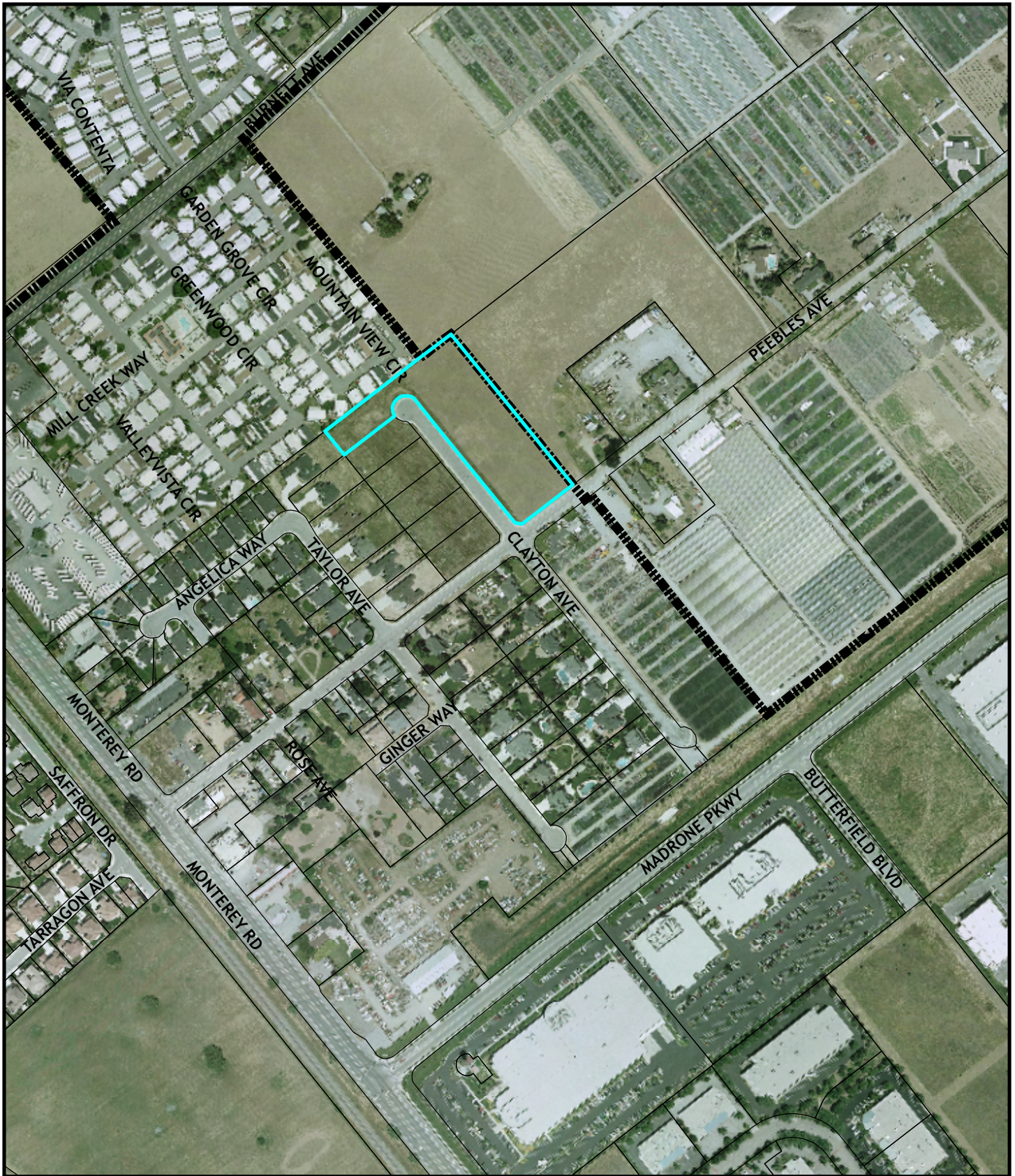
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0 125 250 500 750 1,000 Feet

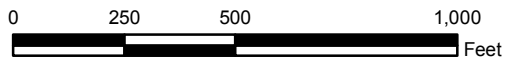
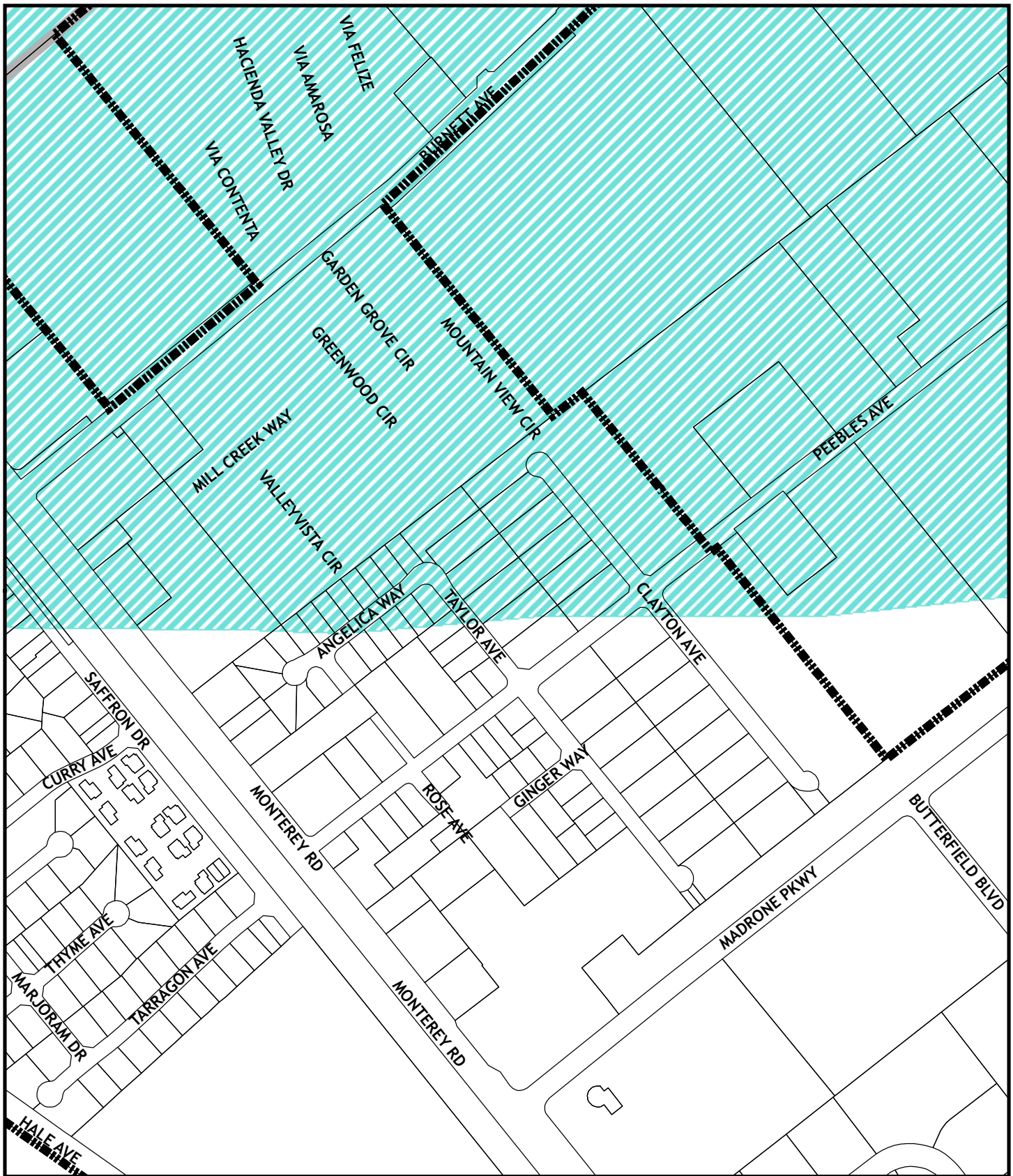


City Boundary



SD-09-02: Clayton-O'Brien
Figure 1. Vicinity Map





 Liquefaction Hazard Zone



Liquefaction Hazards Zones displayed were obtained from the California Geological Survey, Seismic Hazards Zonation Program, 2004.

EA-09-01: Clayton-O'Brien Figure 2. Seismic Hazard Zones



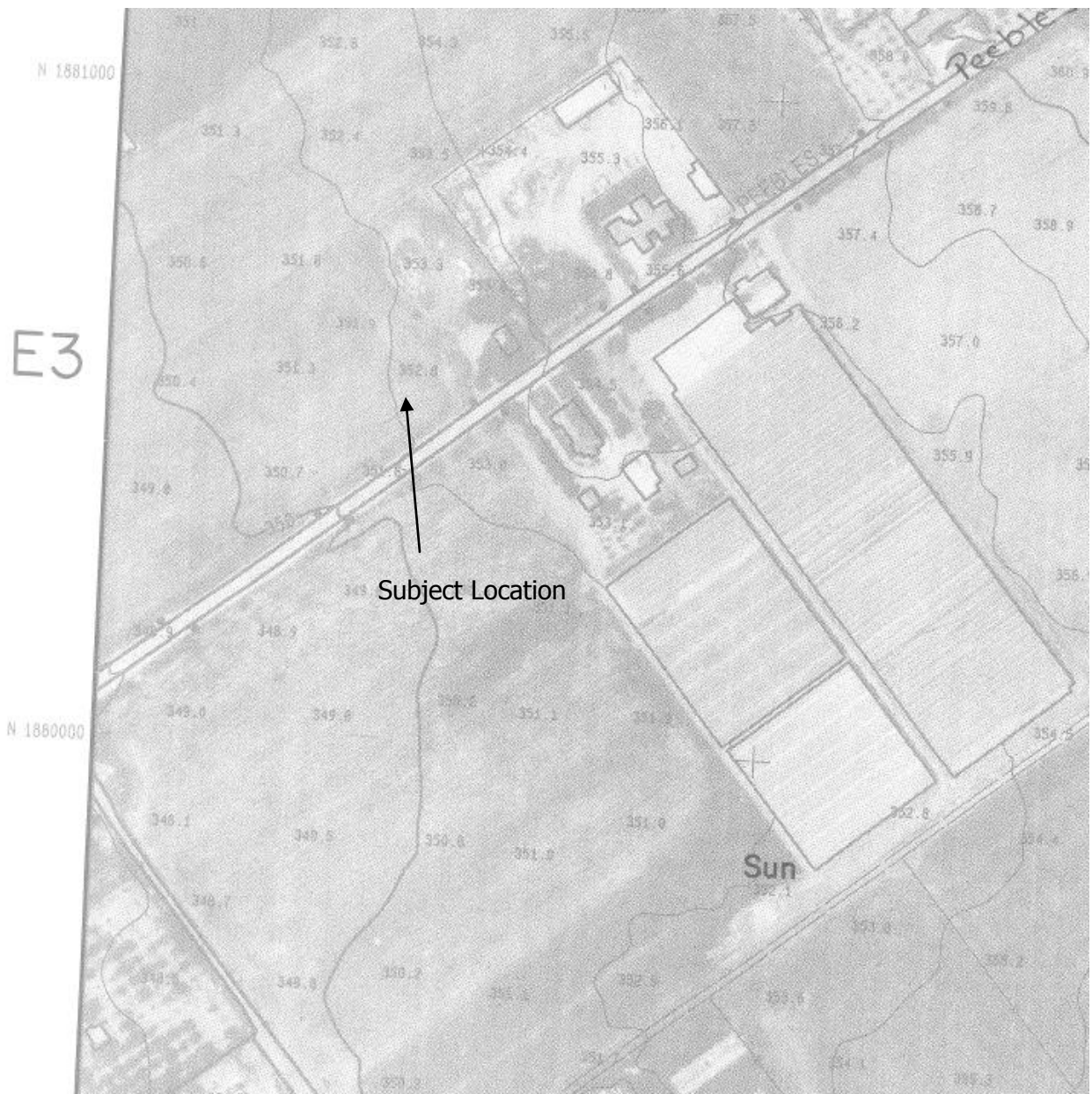


Figure 3. Geologic Map, City of Morgan Hill

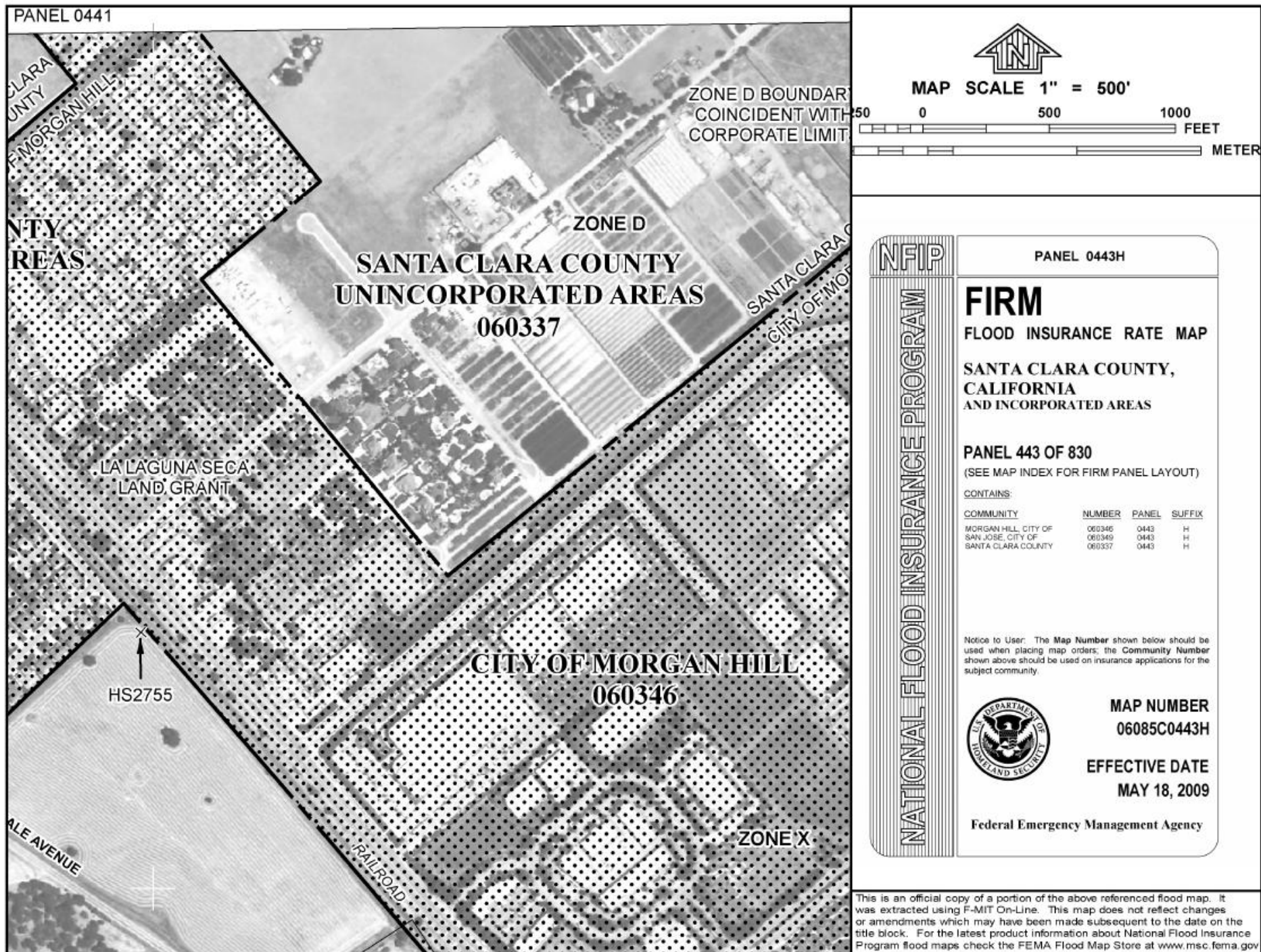
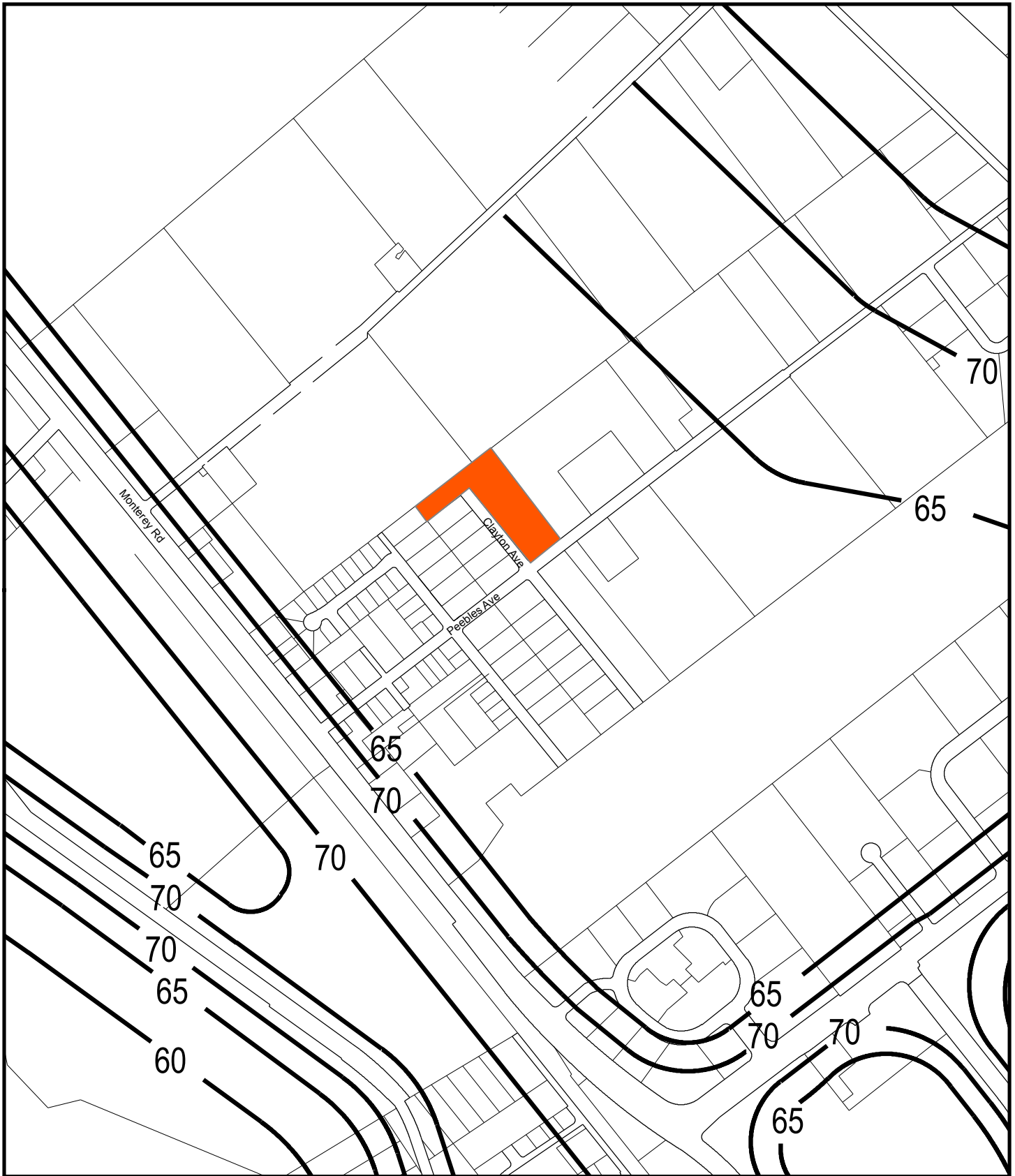


Figure 4. FEMA FIRM Map



0 250 500 1,000 1,500 2,000 2,500
Feet



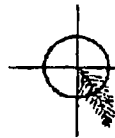
EA-09-01: Clayton-O'Brien
Figure 5. Future Noise Contours



**Geotechnical Investigation
for
Proposed 18-Lot Subdivision
Clayton Avenue Extension
Santa Clara County, California**

**for
ANDERSON REALTY
Morgan Hill, California**

**By
REDWOOD GEOTECHNICAL ENGINEERING, INC.
Soil, Foundation & Forensic Engineers
Project No. 1275SCL
September 1998**



**REDWOOD GEOTECHNICAL
ENGINEERING, INC.**

CONSULTING SOIL, FOUNDATION
& FORENSIC ENGINEERS

Project No. 1275SCL
September 29, 1998

ANDERSON REALTY
c/o Mr. Richard Anderson
480 LaBaree
Morgan Hill, California 95037

Subject: Geotechnical Investigation

Reference: Proposed 18-Lot Subdivision
Clayton Avenue Extension
Morgan Hill, Santa Clara County, California

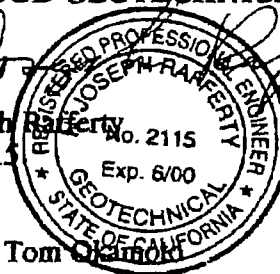
Dear Mr. Anderson:

As requested, we completed a Geotechnical Investigation for a proposed 18-lot residential subdivision. Exploratory excavations on the site encountered firm clayey silt in the upper 2 feet, underlain by silty sand and gravel to the depths explored. Conventional construction appears suitable for the proposed residences. Conservatively designed continuous spread footings are recommended for this site. Primary geotechnical considerations will include embedding foundations into firm soil or compacted engineered fill, providing uniform subgrade support for concrete slabs-on-grade, and providing positive site drainage. We encountered no unusual soil conditions which would preclude well-built residences at this site utilizing convention construction methods and materials. Our report presents our geotechnical recommendations for design and construction of the project, as well as the findings of our investigation upon which they are based.

If you have additional questions regarding this report, please call our office.

Very truly yours,
REDWOOD GEOTECHNICAL ENGINEERING, INC.

N. Joseph Rafferty
G.E. 2115



Copies: 6 to Addressee

1 to MH Engineering Co., Attn. Mr. Tom Okamoto

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GEOTECHNICAL INVESTIGATION

Introduction

This report presents the results of our geotechnical investigation for a proposed 18-lot residential subdivision and proposed extension of Clayton Avenue northwest of Peebles Avenue in Morgan Hill, Santa Clara County, California (Figure 1). The new residential construction would incorporate raised wood floors, conventional foundations, and concrete slab-on-grade garage floors. Mass grading is anticipated for site clearing, building pad preparation, and proper site drainage.

Our previous work at this site included an evaluation of the proposed pavement sections for the Clayton Avenue extension. The pavement recommendations in this report are based on the results of our earlier testing and analysis, presented in a letter, dated June 20, 1998. For this investigation, we were provided with a reduced copy of a Site Plan by MH Engineering Company. Our Site Plan Schematic, Figure 2, is based on a reduced copy of this plan.

Purpose and Scope

The purpose of our investigation was to evaluate the surface and subsurface conditions at the site, and to develop geotechnical recommendations for design and construction of the project. The specific scope of our work included the following:

1. A review of available data in our files pertinent to the site and vicinity. This included published geologic maps and other work in the site vicinity.
2. Subsurface exploration with four exploratory test pits 4 to 7 feet deep.
3. Laboratory testing of selected samples.

4. Evaluation of the field and laboratory data to develop geotechnical recommendations for site grading, building foundations, concrete slabs-on-grade, pavements, and site drainage.
5. Presentation of the results of our investigation in a written report.

Site Location and Project Description

The property is located near the intersection of Peebles Avenue and Clayton Avenue, at the northwestern edge of Morgan Hill, as shown on our Site Vicinity Map (Figure 1). The proposed subdivision is bounded on the southeast by Peebles Avenue, and the southwest by Angelica Way (formerly Taylor Avenue). To the northwest is a mobile home park. To the northeast is vacant land. The proposed improvements will include 18 new single-family building sites and a new access road (Clayton Avenue extension) entering the subdivision from Peebles Avenue, as shown on our Site Plan Schematic (Figure 2). The new residences will be accessed from either the proposed Clayton Avenue extension or the existing Angelica Way. At the time of our investigation, the essentially level property was vegetated with grass and scattered weeds. No site improvements were reported or evident during our field reconnaissance.

Field Investigation and Laboratory Testing

We completed a field reconnaissance and subsurface exploration at this site on September 10, 1998. Four exploratory test pits were excavated to depths of 4 to 7 feet. The approximate locations of the test pits and proposed improvements are shown on the Site Plan Schematic (Figure 2). The subsurface conditions were logged in accordance with the Unified Soil Classification System (ASTM D2487). The test pits were loosely backfilled after logging the subsurface profile. The test pit logs

are presented as Figures 3 through 6. Samples were collected at selected depths for laboratory testing. The results of the laboratory testing are shown on the test pit logs. The logs denote the subsurface conditions encountered at the locations and dates indicated. This does not warrant that they are representative of subsurface conditions at other locations or times.

Subsurface Conditions

The exploratory excavations encountered firm clayey silt in the upper 2 feet underlain by silty sand with gravel to the depths explored. Published geologic maps indicate that the native soil strata in the site vicinity consist of predominantly granular alluvial deposits.

Test Pits 1 and 2, located along the proposed Clayton Avenue extension alignment, and Test Pit 3, located near the corner of proposed Lots 31, 32, 47, and 48, encountered similar soil profiles. The upper 2 feet consisted of firm, dry to damp, clayey silt with minor sand and gravel. We encountered firm, damp, silty sand and gravel at depth. Test Pit 4, located near proposed Lots 36 and 51, encountered about 1 foot of firm, dry, clayey silt and about 2 feet of firm, damp, silty sand, underlain by firm, damp to moist, silty sand and gravel to the depths explored.

We did not encounter static groundwater in any of the test pits. It should be noted that groundwater levels may fluctuate due to variations in rainfall, stratification, construction activity or other factors not evident during our investigation.

Seismicity

A general discussion of seismicity is presented below. A detailed discussion of faulting, seismicity, and geologic hazards is beyond the scope of this report.

Published geologic maps indicate that the proposed subdivision is located about 10 miles northeast of the San Andreas Fault System and about 3½ miles southwest of the Calaveras Fault System. These larger fault systems have generated moderate to severe earthquakes on several occasions during the recorded history of the area. Recent studies have concluded that there is a high probability (on the order of 67%) that a large earthquake will cause strong to severe ground shaking in the Santa Clara Valley during the next 30 years. The Coyote Creek and Silver Creek faults have also been mapped about 1 mile and 2 miles northeast of the site, respectively. These smaller fault systems may also be capable of generating strong to severe ground shaking at this site. No mapped fault traces are known to cross this site.

The primary seismic hazard at this site appears to be from strong ground shaking. The potential for surface fault rupture appears low. The property is situated on essentially level topography over dense, well-consolidated soil. The potential for ground failure from liquefaction, lateral spreading, landsliding, or other seismic ground failure appears very low.

Damage to wood-frame structures has been extensively documented following the 7.1 magnitude Loma Prieta earthquake in 1989, and other recent earthquakes in California. Minimum seismic distress occurred in modern construction where homes were supported on foundations embedded into firm materials, where the wood frame structures were well braced for lateral shear, and where the wood frame and the foundations were tied to each other to minimize differential movement. These considerations should be incorporated into the design and construction of the project to maximize the seismic resistance of the new structures.

DISCUSSIONS, CONCLUSIONS, AND RECOMMENDATIONS

Based on the results of our investigation, the site appears compatible with the proposed project, provided the following recommendations are incorporated into the design and construction of the site improvements. The firm native soil and essentially level topography appear compatible with conservatively designed conventional spread footing foundations. The near surface soil appears to have a low expansion potential. At depth, we encountered dense granular sands and gravels. Strong to severe ground shaking should be anticipated during the next 30 years. The structural designs should provide copious shear bracing and tie downs to brace structural frames and distribute seismic loads.

Conventional footings are recommended for the new residences. Anticipated footing depths would be 12 to 18 inches for new one- and two-story wood frame structures. Building Code requirements are likely to control the footing design depth. Foundation excavations should be extended into firm soil or compacted engineered fill and should be observed by the soil engineer prior to placing reinforcement or concrete. Continuous footings or tie beams should cross brace the foundations and provide structural support for interior bearing walls and shear walls.

Anticipated grading would include clearing the sites, mass grading for the building pads and driveways, and providing positive drainage gradients. The silty near-surface soil will probably require substantial moisture conditioning and mixing prior to being incorporated into compacted engineered fills. If debris, old foundations, unconsolidated soil, or other unsuitable materials are encountered during preliminary clearing and site grading, these areas should also be sub-excavated and replaced with compacted engineered fill.

Thorough control of runoff and positive site drainage will be critical both during construction and after the project is completed. The final grading and landscaping at each home site should not

obstruct the site drainage or allow moisture to accumulate adjacent to foundations, slabs, pavements, or other improvements. We recommend elevating building pads slightly above adjacent finish grades to promote positive drainage away from each new residence. Pavements and driveways should also be positively sloped for drainage.

The following recommendations should be used as guidelines for preparing project plans and specifications:

Site Grading

1. Where site clearing or grading disturbs the subgrade or the foundation zone soils, the disturbed soil should be replaced as compacted engineered fill. The soil engineer should be notified at least **four (4) working days** prior to any site clearing or grading so that the work in the field can be coordinated with the grading contractor, and arrangements for testing and observation can be made. The recommendations of this report are based on the assumption that the soil engineer will perform required testing and observation during grading and construction. It is the owner's responsibility to make the necessary arrangements for these required services.
2. Areas to be graded should be cleared of all obstructions including loose fill and other debris or unsuitable material. Depressions or voids created during site clearing should be backfilled with engineered fill. Cleared areas should be stripped of organic-laden topsoil. Stripping depth is typically about 2 to 4 inches. Actual depth of stripping should be determined in the field by the soil engineer. Strippings should be wasted off-site or stockpiled for use in landscaped areas if desired.
3. Areas to receive engineered fill should be scarified to a depth of 6 inches, moisture conditioned, and compacted to at least 90 percent relative compaction. Portions of the site may need to be moisture conditioned to achieve a moisture content suitable for effective compaction. These

areas may then be brought to design grade with engineered fill. Engineered fill should be placed in thin lifts not exceeding 8 inches in loose thickness, moisture conditioned, and compacted to at least 90 percent relative compaction. Moisture content should be about 2 to 6 percent above the optimum moisture content. The upper 6 inches of pavement subgrades should be compacted to at least 95 percent relative compaction. The aggregate base below pavements should likewise be compacted to at least 95 percent relative compaction. Where referenced in this report, Percent Relative Compaction and Optimum Moisture Content shall be based on ASTM Test Designation D1557-91.

4. If grading is performed during or shortly after the rainy season, the grading contractor may encounter compaction difficulty, due to excessive moisture in the subgrade soil. If compaction cannot be achieved by adjusting the soil moisture content, it may be necessary to over excavate the subgrade soil and replace it with select import angular crushed rock to stabilize the subgrade. The depth of over excavation is typically about 12 to 24 inches under these adverse conditions. Specialized grading procedures will require observation by the soil engineer or his representative.

5. The native on-site soils generally appear suitable for use as engineered fill. Import materials used for engineered fill should be non-expansive, free of organic material, and contain no rocks or clods greater than 6 inches in diameter, with no more than 15 percent larger than 4 inches. Larger cobbles should be broken down or removed from engineered fills. We estimate shrinkage factors of about 10 to 20 percent for the on-site materials when used in engineered fills.

6. Following grading, all disturbed areas should be planted as soon as possible with erosion-resistant vegetation. After the earthwork operations have been completed and the soil engineer has finished his observation of the work, no further earthwork operations shall be performed except with the approval of and under the observation of the soil engineer.

Foundations

7. Conservatively designed conventional spread footings are recommended for foundation support. Footings should be embedded into firm soil or compacted engineered fill. Continuous interior footings or tie beams are recommended below interior all shear walls and bearing walls. Isolated footings should generally be limited to interior floor loads, exterior decks, and other lightly loaded structures which can accommodate slight seasonal earth movement without significant distress.

8. Spread footings should extend at least 12 inches below the lowest adjacent grades. Continuous footings and tie beams should be 12 inches wide. Isolated footings should be at least 18 inches in diameter. Actual footing depths should be determined in accordance with anticipated use and applicable design standards. The footings should be reinforced as required by the structural designer based on the actual loads transmitted to the foundation. As a minimum, we recommend No. 4 bars in both the top and the bottom of all continuous footings and tie-beams.

9. The foundation trenches should be kept moist and be thoroughly cleaned of all slough or loose materials prior to pouring concrete. In addition, all footings located adjacent to other footings or utility trenches should have their bearing surfaces founded below an imaginary 1.5:1 plane projected upward from the bottom edge of the adjacent footings or utility trenches.

10. Foundations designed in accordance with the above may be designed for an allowable soil bearing pressure of 1,500 psf for dead plus live loads. This value may be increased by one-third to include short-term seismic and wind loads.

11. For lateral loads, a friction coefficient of 0.35 may be assumed at the base of the footing. Additional passive resistance may be assumed where footings are poured neat against firm native soil. An equivalent passive fluid pressure of 300 pcf may be applied to the sidewalls of the footings when poured against firm native soil.
12. Total and differential settlements under the proposed light building loads are anticipated to be less than 1/4 inch and 1 inch respectively.

Concrete Slabs-on-Grade

13. Concrete slabs-on-grade should be supported on at least 4 inches of non-expansive granular material. Prior to construction of each slab, the subgrade surface should be thoroughly moisture conditioned and then proof rolled to provide a smooth, firm, uniform surface for slab support. The subgrade below concrete slabs-on-grade should not be allowed to dry out prior to placing concrete. In areas where slabs bear on clayey soils, a 5 inch minimum slab thickness and an additional 2 inches of gravel are recommended to reduce the potential for future slab distress.
14. In areas where floor wetness would be undesirable, a blanket of 4 inches of clean free-draining gravel should be placed beneath the floor slab to act as a capillary break. In order to minimize vapor transmission, a durable impermeable membrane should be placed over the gravel. The membrane should be covered with 2 inches of sand or rounded gravel to protect it during construction. The sand or gravel should be lightly moistened just prior to placing the concrete to aid in curing the concrete.

15. To minimize random slab cracking, garage slabs and exterior slabs should be divided with joints into smaller, approximately square, sections. Control joints or expansion joints should be provided at maximum spacings of 10 feet on center. Control joints should also be provided at corners or other discontinuities. Slab reinforcing should be provided in accordance with the anticipated use and loading of the slab.

16. Exterior concrete slab-on-grade sections should be founded on firm, uniformly moisture conditioned and compacted subgrades. Reinforcing should be provided in accordance with the anticipated use and loading of the slab. The reinforcement **should not** be tied to the building foundations. These exterior slabs can be expected to suffer some cracking and movement. However, thickened exterior edges, a well-prepared subgrade including premoistening prior to pouring concrete, adequately spaced expansion joints, and good workmanship should minimize cracking and movement.

Flexible Pavements

17. Minimum pavement sections within the city of Morgan Hill incorporate a 4-inch thick layer of asphaltic concrete, A.C., over an 8-inch thick layer of class 2 aggregate base, A.B. This design section is based on a traffic index of 6.0 and an assumed R-value of at least 20. A bulk sample of the native soil was collected along the proposed alignment of the Clayton Road Extension. The measured R-value of the bulk sample was 39. Our analysis indicates that the minimum pavement section will be applicable for this site. If higher traffic loadings are anticipated, then additional R-value testing or analysis may be required.

Site Drainage

18. Thorough control of runoff and seepage is essential to the future performance of the proposed residential improvements. We recommend elevating the building pads at least 12 inches above the street. The building pads should also be elevated slightly above the surrounding yard areas. Diligent maintenance of completed drainage improvements is required for the life of the improvements. The drainage improvements should be both durable and easily accessible to promote frequent routine maintenance. Collected water should be discharged in a controlled fashion. It will be the owner's responsibility at each site to maintain the site drainage system in good working condition for the life of the improvements.

19. Surface drainage must include provisions for positive slope gradients so that surface runoff flows away from the foundations, driveways, and other improvements. Minimum positive slope gradients of two percent are recommended for all concrete and landscape surfaces in the vicinity of the site improvements. Surface drainage must be directed away from the building foundations and concrete slabs. Runoff must not be allowed to sheet flow over graded slopes. Berms or V-ditches should be constructed at the top of slopes to divert water toward suitable collection facilities. Collected water should be discharged below the site in a controlled fashion.

20. Full roof gutters should be placed around all eaves. Discharge from the roof gutters should be conveyed away from the downspouts by splash blocks, lined gutters, pipes or other positive drainage. Collected runoff should be discharged away from the building foundations and other improvements.

21. The migration of water or spread of extensive root systems below foundations, slabs, or pavements may cause undesirable differential movements and subsequent damage to these structures. Landscaping should be planned accordingly.

Plan Review, Construction Observation, and Testing

22. Our firm must be provided the opportunity for a general review of the final project plans and specifications prior to construction so that our geotechnical recommendations may be properly interpreted and implemented. If our firm is not accorded the opportunity of making the recommended review, we can assume no responsibility for misinterpretation of our recommendations. We recommend that our office review the project plans prior to submittal to public agencies, to expedite project review. The recommendations presented in this report also require our observation and, where necessary, testing of the earthwork and foundation excavations. Observation of grading and foundation excavations allows anticipated soil conditions to be correlated to those actually encountered in the field during construction.

LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The recommendations of this report are based upon the assumption that the soil conditions do not deviate from those disclosed in the exploratory excavations. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that planned at the time, our firm should be notified so that supplemental recommendations can be given.
2. This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information and recommendations contained herein are called to the attention of the Architects and Engineers for the project and incorporated into the plans, and that the necessary steps are taken to ensure that the Contractors and Subcontractors carry out such recommendations in the field. The conclusions and recommendations contained herein are professional opinions derived in accordance with current standards of professional practice. No other warranty expressed or implied is made.
3. The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they be due to natural processes or to the works of man, on this or adjacent properties. In addition, changes in applicable or appropriate standards occur whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or partially, by changes outside our control. Therefore, this report should not be relied upon after a period of three years without being reviewed by a soil engineer.

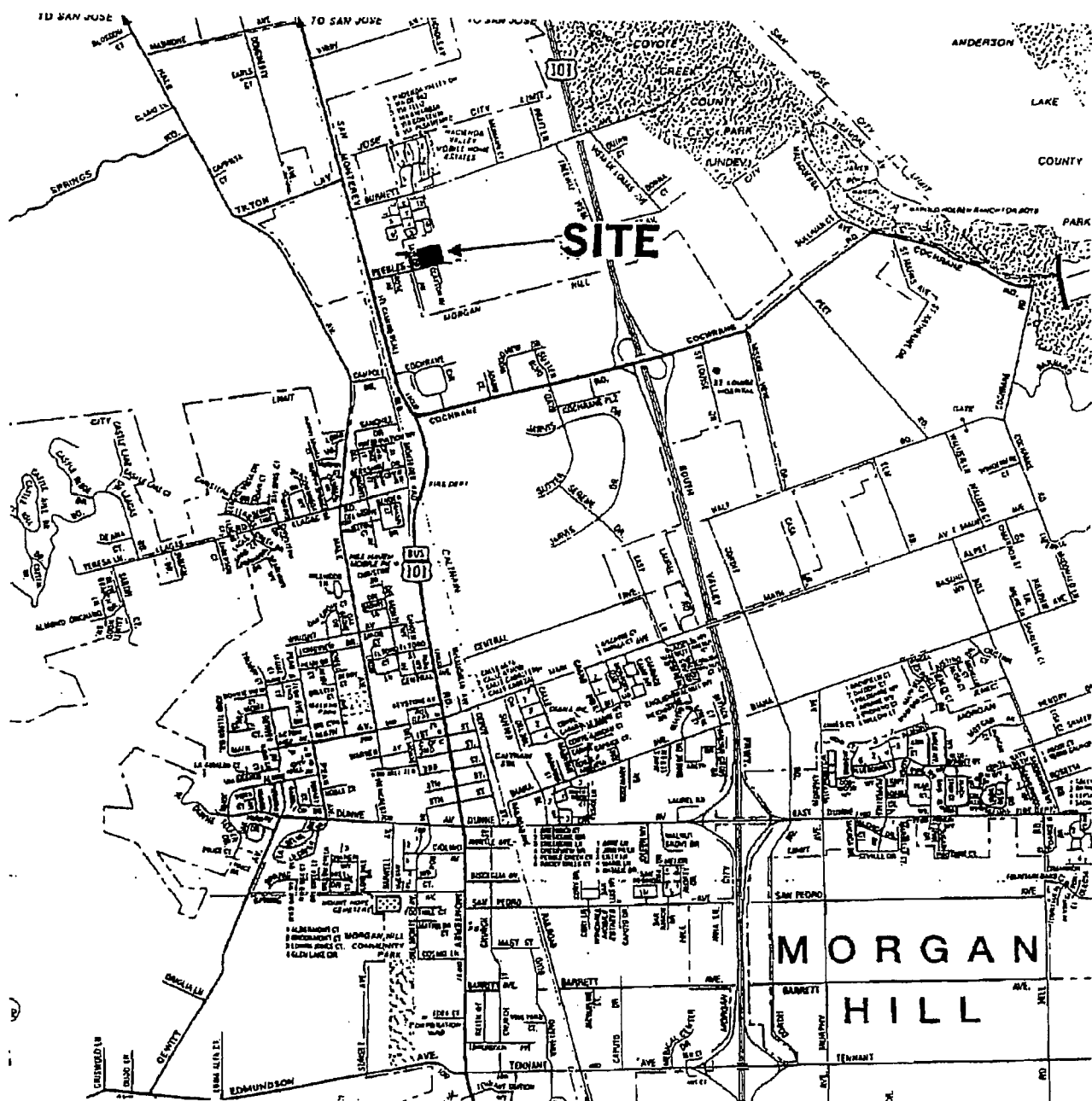
LIST OF FIGURES

Figure 1. Site Vicinity Map

Figure 2. Site Plan Schematic

Figures 3-6. Test Pit Logs

Figure 7. R-Value Test Results



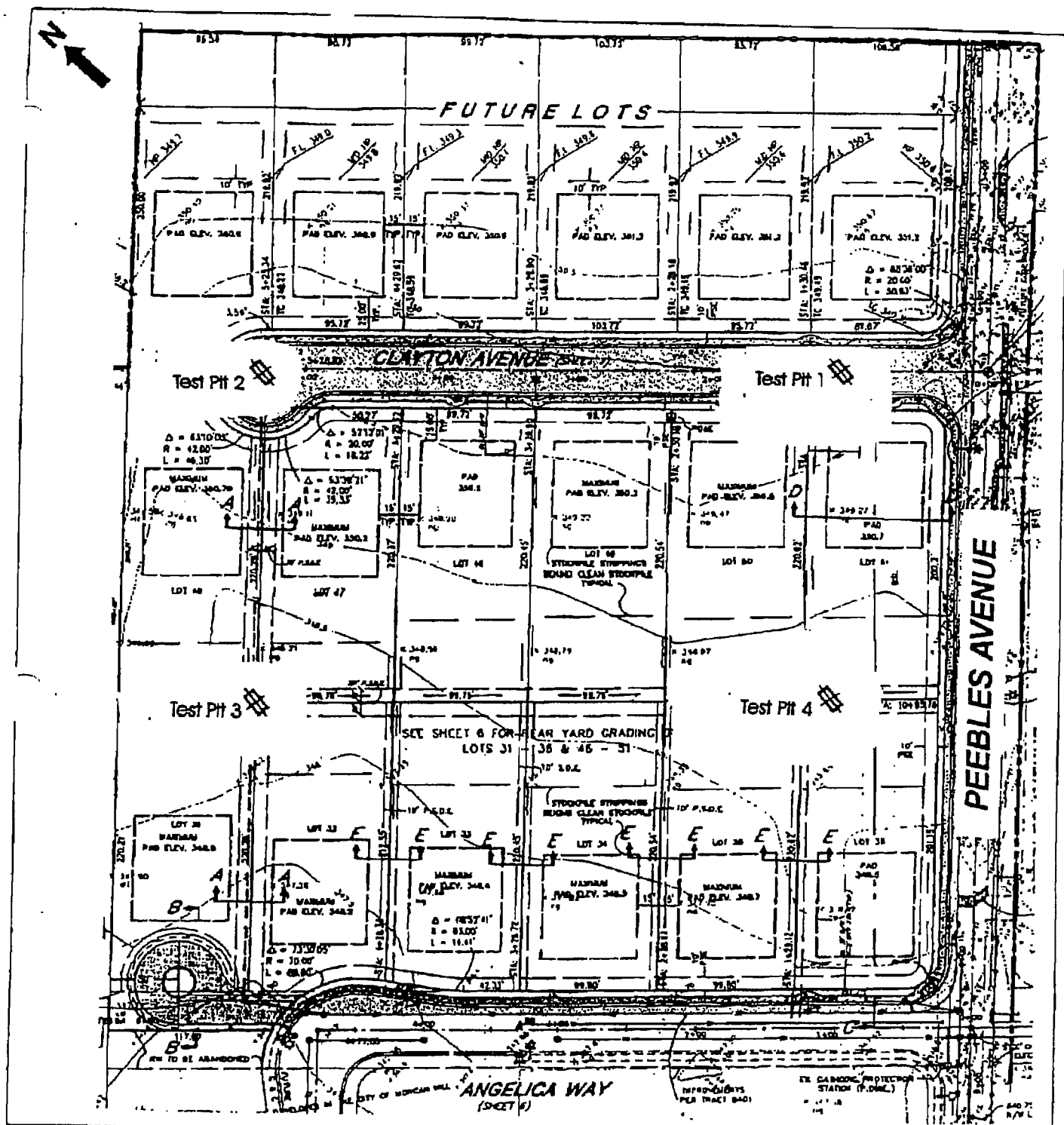
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SITE VICINITY MAP
Clayton Avenue Extension
Santa Clara County, California

PROJECT NUMBER: 1275SCL
September 1998

BASE MAP: Street Map of Morgan Hill & Vicinity

Figure 1



**REDWOOD GEOTECHNICAL
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SITE PLAN SCHEMATIC
Clayton Avenue Extension
Santa Clara County, California

PROJECT NUMBER: 1275SCL

BASE MAP: Site Plan by MH Engineering Co.

September 1998

APPROXIMATE SCALE: 1" = 100'

Figure 2

LOGGED BY: NJR DATE DRILLED 9/10/98 BUCKET WIDTH 24 inches TEST PIT NO. TP-1

Depth, ft.	Sample No.	Symbol	SOIL DESCRIPTION	Unified Soil Classification	Blows/foot 360 ft-lbs.	Qu - t. s.f. Penetrometer	Dry Density p.c.f.	Moisture % dry wt.	MISC. LAB RESULTS
1	1-1	<input type="checkbox"/>	Light grey-brown clayey SILT some SAND & GRAVEL, dry to damp loose in top 6", then stiff, hard rounded gravels to 3" increase in gravel below 12" grading to silty sand darker color increase moisture	ML				4.4	
2	1-2	<input type="checkbox"/>	Dark brown silty SAND & GRAVEL damp, dense uniform excavation	SM- GM				5.7	
3	1-3	<input type="checkbox"/>						6.1	
4	1-4	<input type="checkbox"/>						5.1	
5									
6									
7	1-5	<input type="checkbox"/>						5.7	
8			7' Bottom of hole No groundwater encountered						
9									
10									
11									

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September 1998

Clayton Avenue Extension; Morgan Hill, California

Figure 3

LOGGED BY: NJR		DATE DRILLED 9/10/98		BUCKET WIDTH 24 inches		TEST PIT NO. TP-2			
Depth, ft.	Sample No.	Symbol	SOIL DESCRIPTION	Unified Soil Classification	Blows/foot 350 ft-lbs.	Qu - t. s.f. Penetrometer	Dry Density p.c.f.	Moisture % dry wt.	MISC. LAB RESULTS
1	2-1	<input type="checkbox"/>	Light grey-brown clayey SILT dry, loose, fine roots	ML				4.5	
2	2-2	<input type="checkbox"/>	some rounded gravels to 2"					4.9	
3	2-3	<input type="checkbox"/>	darken color, increasing in gravel Dark brown silty SAND & GRAVEL damp, dense	SM-GM				5.1	
4	2-4	<input type="checkbox"/>	hard rounded gravels to 4"					5.8	
5	2-5	<input type="checkbox"/>						5.8	
6			5' Bottom of hole						
7			No groundwater encountered						
8									
9									
10									
11									

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TEST PIT LOG

Clayton Avenue Extension; Morgan Hill, California

Figure 4

LOGGED BY: NJR		DATE DRILLED 9/10/98		BUCKET WIDTH 24 inches		TEST PIT NO. TP-3			
Depth, ft.	Sample No.	Symbol	SOIL DESCRIPTION	Unified Soil Classification	Blows/foot 350 ft-lbs.	Qu - t. s.f. Penetrometer	Dry Density p.c.f.	Moisture % dry wt.	MISC. LAB RESULTS
1			Light grey-brown clayey SILT dry, loose @ 6" stiff @ 12" some rounded gravels to 2" more clayey @ 12-21" darker color, increase in gravels	ML					
2			Dark brown silty SAND & GRAVEL slightly damp, medium dense hard rounded cobbles up to 6" some weathered friable sandstone cobbles to 6" wormholes & fine roots to 4'	SM-GM					
3									
4			4' Bottom of hole No groundwater encountered						
5									
6									
7									
8									
9									
10									
11									

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TEST PIT LOG

Clayton Avenue Extension; Morgan Hill, California

Figure 5

LOGGED BY: NJR		DATE DRILLED 9/10/98		BUCKET WIDTH 24 inches		TEST PIT NO. TP-4			
Depth, ft.	Sample No.	Symbol	SOIL DESCRIPTION	Unified Soil Classification	Blows/foot 350 ft-lbs.	Qu - t. s.f. Penetrometer	Dry Density p.c.f.	Moisture % dry wt.	MISC. LAB RESULTS
1	4-1	<input type="checkbox"/>	Light grey-brown clayey SILT dry, stiff	ML		4.5+		5.7	
2	4-2	<input type="checkbox"/>	Light grey-brown silty SAND damp, medium dense trace clay, friable, hard, minor rounded gravels to 2"	SM		4.5+		5.7	
3	4-3	<input type="checkbox"/>	Increasing gravel & moisture			4.5+		6.8	
4	4-4	<input type="checkbox"/>	Dark brown silty SAND & GRAVEL damp to moist, medium dense	SM-GM		4.5+		8.3	
5			4' Bottom of hole						
6			No groundwater encountered						
7									
8									
9									
10									
11									

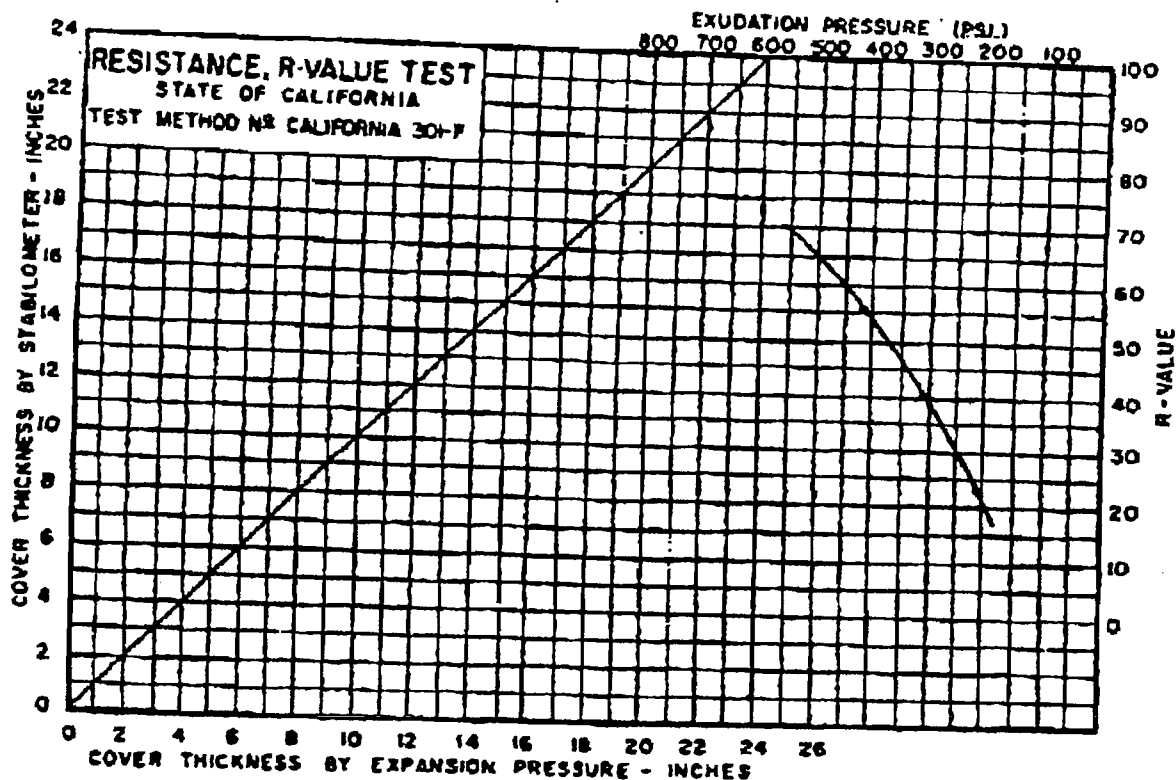
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TEST PIT LOG

Clayton Avenue Extension; Morgan Hill, California

Figure 6



SAMPLE: BULK

DESCRIPTION: BROWN SANDY SILT W/ GRAVELS

SPECIMEN	A	B	C
EXUDATION PRESSURE (PSI.)	207	313	415
EXPANSION DIAL (.0001")	10	17	23
EXPANSION PRESSURE (P.S.F.)	43	74	100
RESISTANCE VALUE, "R"	23	41	56
% MOISTURE AT TEST	12.2	11.5	12.8
DRY DENSITY AT TEST (PCF)	120.4	121.7	122.8
R VALUE AT 300 P.S.I. EXUDATION PRESSURE	= (39)		



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R-Value Test Results
Clayton Avenue Extension
Santa Clara County, California

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Figure 7



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& FORENSIC ENGINEERS

Project No. 1275SCL
August 18, 2000

Monterey Development Group
9781 Blue Larkspur Lane, Ste. 202
Monterey, CA 93940

Attn: Bruce Bonfield

Subject: Supplemental Geotechnical Recommendations for
Alternative Foundation Design

Reference: Proposed 18-Lot Subdivision
Peebles Avenue
Morgan Hill, California

Dear Mr. Bonfield:

We understand that you are proposing to complete the referenced residential development. We completed a geotechnical investigation and report for this project dated September 29, 1998. The site was found to be compatible with conventional spread footings as outlined in our report.

An alternative slab floor and foundation design has been proposed for this project. A similar foundation and floor slab system has been used at the Morgan Meadows and Trovare subdivision projects currently under way by your firm. These projects are underlain by similar soil conditions, predominantly granular, non-expansive soil. The proposed foundations and floor slabs will be a monolithic structures. The proposed construction would incorporate a minimum eight-inch thick reinforced concrete floor slab instead of raised wood floors. Conventional spread footings would be replaced with thickened slabs along the building perimeter and along interior shear walls or bearing walls. Reinforced concrete floor slabs would be 8 inches thick in non-bearing areas and 14 inches thick below shear walls and bearing walls. The 14-inch thick sections would be poured directly on the compacted subgrade of the building pad. This letter summarizes our supplemental geotechnical recommendations for site grading and for the proposed alternative foundation and floor slab design.

A grading plan for the project was completed by MH Engineering Co. The majority of the mass grading for this project was completed by Trinchero construction. Our May 31, 2000 progress report summarized our compaction test results on the building pads. Additional grading will be required to complete the building pads. As of our June 16, 2000 reconnaissance of the site, rough grading for the 12 western lots had essentially been completed. However, haul roads and general site use have disturbed the surface of the building pads. Construction materials and loose surficial fills were locally stockpiled on the site. Lots 51 and 36, incurred much of the construction traffic during subsequent

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construction and grading for underground utility installation and re-paving work on Peebles Avenue. These two pads developed unstable, pumping soil conditions under heavy vehicle traffic. These lots will need to be subexcavated to expose firm compacted soil and then backfilled with lifts of engineered fill. Field density testing indicated satisfactory compaction levels to within a depth of about 2.5 feet below the finish pad grade in the area along Peebles Avenue. Subexcavation should be evaluated in the field by the soil engineer. The surface of the remaining 10 western lots should be scarified, moisture conditioned and compacted. The 6 eastern lots were left approximately 6" below plan finish pad grade. Additional fill will be needed to bring these pads to grade. The surface of these lots should be scarified, moisture conditioned, and compacted prior to placing engineered fills to finish pad grade.

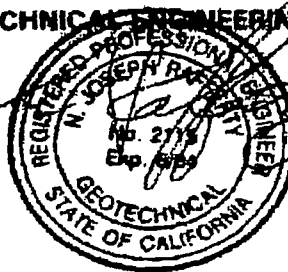
Foundation support for each residence will bear directly on the compacted surface of the finish pad grade. The exterior perimeter grade surrounding each residence will need be raised with additional fill to provide positive drainage gradients. The grade for the Clayton Avenue extension was also left below the plan grade and will need to be raised with compacted lifts of engineered fill. We recommend compacting the finish pad surfaces and roadway subgrade to at least 95% relative compaction. All other engineered fills should be compacted to at least 90% relative compaction in accordance with the recommendations in the geotechnical report for this site. Where necessary, additional fill will need to be brought to the site. Imported fill should be non-expansive granular material consistent with the native soil on this site. The limits of compacted engineered fill should extend at least five feet beyond the limits of the proposed building envelope for each pad.

Our preliminary review indicates that the alternative foundation and slab design will be feasible for the proposed residential construction. We anticipate that our office would review project plans and calculations for the alternative design as they are being developed. Geotechnical aspects of the construction will include completion of the site grading, observation of the foundation/slab construction, and the site drainage. These should be observed and tested during construction. Please call if you have additional questions.

Yours Truly,

REDWOOD GEOTECHNICAL ENGINEERING, INC.

N. Joseph Rafferty
G.E. 2115



Copies: 2 to Addressee
1 to MH Engineers